IN THE SPECIFICATION:

The paragraph beginning at page 6, line 12 has been amended as follows:

Furthermore it has been shown that the analysis of the load- and frequency-dependent modulation of the stim-T interval is sufficiently reliable if the modulation of an individual stimulation interval gives ~~the20inequations~~ the inequality ESI (Extrasystolic Interval) <600ms with ΔESI/BCL ≥10% (BCL = basic cycle length).

The paragraph beginning at page 8, line 5 has been amended as follows:

The dependence of the duration of the action potential [[5]] AP of the myocardium as a function parameter of the duration of the diastole t_d is designated as electric restitution. If this is spontaneously changed during a single heart cycle, for example through an extrasystole, then the action potential or its duration changes. The duration of the action potential is defined by the interval between the beginning of the stimulation and the time at which the action potential has sunk by 90%, and it decreases if the time interval between two successive stimulation pulses becomes smaller. Here a distinction is to be made between the APD change after an extrasystolic stimulation interval and the APD change after a change in the average or basic heart frequency (HR = 1 BCL) according to prior art.

The paragraph beginning at page 8, line 19 has been amended as follows:

The electric restitution curve (ERC) is thus defined as ~~25~~ a function of the action potential duration APD of the cycle length of a previous extrasystolic stimulation pulse interval ESI, i.e. of an individual stimulation pulse interval which is changed from the basic cycle length (BCL), i.e. the average stimulation interval duration by ±ΔESI, and which corresponds to the diastole.

The paragraph beginning at page 11, line 17 has been amended as follows:

In order to be able to use a simpler variable for the ~~10~~ regulation, advantageously not directly the region around the plateau value itself is selected but the gradient of the restitution curve. The gradient of the restitution curve in the respective optimum operating point, which is given by the optimum basic cycle length BCLo arises in that the extrasystolic interval ESI is altered as a percentage (ΔESI/BOL) by a defined positive +ΔESI and/or negative value -ΔESI and the resulting change in the action potential duration +ΔAPD or -ΔAPD, shown by arrows 20 in Fig. 1, is measured. If this gradient of the electric restitution ERG = +ΔAPD/+ΔESI or ERG = -ΔAPD/-ΔESI is applied as a function of the stimulation frequency HR for the rest phase and a load phase, the course represented in Fig. 2 arises.

The paragraph beginning at page 13, line 20 has been amended as follows:

In another example, instead of the gradient, the relative change in the electric restitution can be used by forming the quotient ΔAPD/ΔESI, in each case also the ~~median~~ average values being able to be determined over a ~~plurality~~ number of change cycles.

The paragraph beginning at page 14, line 1 has been amended as follows:

The functional blocks required for controlling frequency or the stimulation interval in dependence on the ERG are represented in the bordered area. As other functional blocks, which form part of the standard equipment of a normal QT pacemaker, a stimulation electrode 1 and a stimulation pulse generator 10 supplying the stimulation electrode 1 are provided. Furthermore an ECG amplifier 2 is connected on the one hand to the stimulation electrode 1 and on the other hand to a detection stage for detecting the stim-T interval as a measuring variable. Moreover such a system contains a microprocessor, which can be programmed via a telemetry stage 12, with a process control 11.

The paragraph beginning at page 14, line 20 has been amended as follows:

The functioning of the cardiac pacemaker is as follows. [[5]] The stimulation pulse generator 10 supplies a stimulation pulse to the stimulation electrode and the ECG amplifier amplifies the intracardial ECG signal derived via the stimulation electrode 1. From this amplified signal, the detection stage 3 analyses the interval duration STI between the stimulation pulse and the T wave that corresponds to the QT interval or the action potential duration. In the calculation stage 4, the gradient of the electric restitution ERG is calculated, however others of the above-mentioned variables can also be used. To this end first of all, triggered by the modulator 9, the change $\pm\Delta$STI is calculated, with the stim-T interval value supplied by the detection stage, which change has been caused by the change ΔESI in the stimulation interval, and then the quotient ERG = ΔSTI/ΔESI is determined. In the average value stage 5, the average value ERGm of the ERG values is calculated over a number of change cycles. With the arrow from the exit of the average value stage 5 to the set value memory 6 is indicated that the ERGm value, which in the body's rest state is measured at a ~~median~~ <u>average</u> stimulation frequency of roughly 90/min, is stored as the set value.

The paragraph beginning at page 15, line 15 has been amended as follows:

In the set ~~Value/actual Value Comparator~~ <u>value/actual value comparator</u> 13, the difference between the average value of the gradient of the electric restitution ERGm and the set value ERGs is formed, and is given as the difference value ΔERG to the control stage 8, the latter being used to adjust the average stimulation frequency HR_0. This is calculated for example with the aid of the following functions:

HRo = HRmin + k*ΔERG,

wherein HR is so regulated that HR is < HRmax. Here HRmin and HRmax are minimum or maximum frequencies which can be predetermined by external programming and stored in the memory 7, and k is a proportionality factor. HRmin is generally predetermined by the optimum ~~median~~ <u>average</u>

stimulation frequency HRo in the rest state. The basic frequency HRo thus determined is supplied to the modulation stage 9, in which the basic cycle length BOL = 1/HRo is modulated periodically with an interval change $\pm\Delta$ESI and the resulting stimulation interval ESI = BCLo + ΔESI is formed. In the following stimulation pulse generator 10, the stimulation pulse is then output in dependence on the ESI value. The regulation is repeated until the value ΔERG is zero.